

What is claimed is:

1. An optical information recording medium, comprising:
a substrate;
a recording layer which is provided on the substrate and records information by receiving light irradiation, which causes a phase change from a crystalline phase to an amorphous phase; and
a write-protect layer which is provided in an abutting position to the recording layer and prevents the recording layer from changing from the amorphous phase, formed by the phase change, to the crystalline phase.
2. The optical information recording medium according to claim 1, wherein the write-protect layer contains an element or a compound which physically or chemically changes at a temperature of 600°C or more.
3. The optical information recording medium according to claim 1, wherein the write-protect layer comprises a metal containing compound that is physically or chemically stable at a temperature of around 200°C, and which releases O₂ or N₂ upon being chemically or physically changed at a temperature of 600°C or more.
4. The optical information recording medium according to claim 1, wherein the write-protect layer contains a cobalt element or a cobalt compound.
5. The optical information recording medium according to claim 1, wherein the write-protect layer is substantially free of Antimony (Sb).
6. The optical information recording medium according to any one of claims 1 to 5, wherein a thickness of the write-protect layer is 1 nm to 5 nm inclusive.

7. The optical information recording medium according to claim 1, wherein the recording layer is irradiated with a laser beam from a side of the substrate or an opposite side of the substrate to record and reproduce information.

8. An optical information recording medium, comprising:

a recording layer which is formed of a crystalline phase-change recording material and records information by being irradiated with a light having a wavelength of 500 nm or less; and

a write-protect layer which is provided in an abutting position to the recording layer and prevents information on the recording layer from being overwritten by irradiation of the light.

9. The optical information recording medium according to claim 8, wherein the write-protect layer comprises a metal containing compound that is physically or chemically stable at a temperature of around 200°C, and which releases O₂ or N₂ upon being chemically or physically changed at a temperature of 600°C or more.

10. The optical information recording medium according to claim 8, wherein the write-protect layer contains a cobalt element or a cobalt compound.

11. The optical information recording medium according to claim 8, wherein the write-protect layer is substantially free of Antimony (Sb).

12. The optical information recording medium according to claim 8, wherein the write-protect layer contains cobalt (II) cobalt (IV) oxide.

13. The optical information recording medium according to claim 8, wherein the recording layer does not change from an amorphous phase to a crystalline phase when continuous light irradiation is performed on the amorphous phase formed by changing the phase-change recording material.

14. An optical information recording medium, comprising:

a substrate; and

a crystalline recording layer,

wherein a layer which contains a cobalt element or a cobalt compound is formed on one side or both sides of the recording layer.

15. The optical information recording medium according to claim 14, wherein the cobalt element or the cobalt compound physically or chemically changes when the recording layer is irradiated with light with a wavelength of 500 nm or less to change the recording layer from a crystalline phase to an amorphous phase.

16. The optical information recording medium according to claim 14, wherein the cobalt element or the cobalt compound has a crystal structure change at a temperature of approximately 900°C.

17. A method of recording and reproducing information on and from an optical information recording medium which comprises:

a recording layer formed on a substrate and made of a crystalline phase-change recording material; and

a write-protect layer which is provided in an abutting position to the recording layer to prevent amorphous recording marks formed on the recording layer from being erased, the method comprising the step of:

irradiating the recording layer with a laser beam having a wavelength of 500 nm or less from a side of the substrate or an opposite

side of the substrate to record or reproduce information.